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## Rural and technological innovations in the new model for development

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- **The U.S. Farm Bill** and its impact on the WTO negotiations
- **Rural tourism on the rise in Uruguay**
- **Food security:** the case of Kwamalasamutu

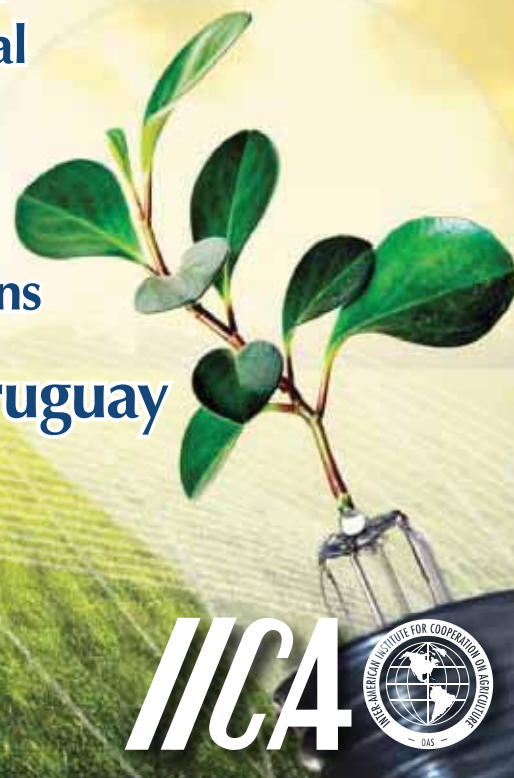




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# From flood relief to food and nutrition security to income generation in Kwamalasamutu, Suriname

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Inter-thematic

## Abstract

The devastating effects of severe weather patterns occasioned by climate change, frequently present opportunities for enhancing food and nutrition security in affected communities. Flooding in several hinterland communities in Suriname in 2008 presented such an opportunity. Kwamalasamutu one of the largest Amerindian communities in Southern Suriname close to the border with Brazil was severely affected. Farms were flooded and food security of the community was threatened.

A joint project of relief, rehabilitation and food and nutrition security was conducted by the IICA in Suriname and the Suriname Red Cross. The experience included in this document resulted in enhanced food security of the community and income generation for participating farmers.

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## Introduction

In August 2008, unusually heavy rains inundated several communities in the Eastern and Southern regions of Suriname, Tapanahoni, Lawa, Upper Marowijne and Coeroeni river basins, including such villages as Godo olo, Dritabiki and Kwamalasamutu. Early assessments indicated that over 3000 households were affected including over 250 in Kwamalasamutu. As the water receded it became clear that farms were severely damaged and many crops on which the villagers depended for their basic food and nutrition needs were destroyed. Cassava, their main staple, sweet potatoes, banana, passion fruit and colocasia crops were all devastated. Most of the cassava rotted in the ground.

for farm rehabilitation and sustainability food security in the affected communities. Kwamalasamutu was severely affected and required special attention. In that sense, IICA was invited to partner with them to carry out the farm rehabilitation and food security activities.



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## Kwamalasamutu

The Suriname Red Cross (SRC) carried out a campaign to bring immediate relief to the households by delivering food packages and other supplies. In carrying out the relief efforts the SRC recognized the need

Kwamalasamutu was identified for intervention. It is an Amerindian village with an approximate population of 900 inhabitants located in the south of Suriname near the border with Brazil

on the Sipaliwini River. It is the most central and important Amerindian village in Suriname, not only because it is the interior's largest village, but also because it is home to the Granman, the Paramount Chief of the Trio Tribe, an Amerindian people in Suriname, Brazil and Guyana. While the Village is of central importance due to its size as well as cultural, religious and political significance, there is still a lack of infrastructural, social and technical development, which is attributed mainly to its isolated location.

The village can only be reached by airplane (approximately two hours) or boat (approximately a week and a half travel from the capital, Paramaribo, depending on rains). Due to the difficulty of travel, the transport of modern goods, tools and technology is very difficult and expensive. In addition, the isolation of the village has had a negative impact on the economic development and income generating opportunities of the community; with the village all but cut off from the major coastal markets.

Kwamalasamutu is also disadvantaged in regards to issues of food security and has been severely affected by the changing weather patterns and increased rains in the region. The community is vulnerable to food security problems due to its isolation but more importantly because of its dependency on cassava as a staple crop and lack of agricultural diversification.

The change in weather patterns and increased rains have caused many of the cassava plots to become oversaturated

and the roots to rot and die before the crops can be harvested.

Another problem that occurs every two to three years is infestation by leaf cutter ants (also known as Acoushi ants). The ants are attracted to cassava and the traditional plots of the Amerindians and can ruin entire seasons, leaving the village with little to no food.

Recently the food security situation has become so severe that the government and other organizations, including the Red Cross have flown in food to support the community.

## Food security initiative

The SRC partnered with IICA and together the two institutions conducted assessments in the Sipalawini Districts. Following the assessment the SRC and IICA agreed to jointly conduct a relief, rehabilitation and food and nutrition security programme in affected communities.

The programme of activities designed by IICA and SRC for Kwamalasamutu was developed using the Agro-Matrix as its philosophical guide.

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The AGRO-Matrix				
Systemic Concept	Rural Territories	Agricultural Production-Trade Chains	National and International Context	Strategic objectives
Sustainable development approach				
Production - Trade	I. Promoting competitive rural enterprises	II. Integrating chains and strengthening their competitiveness	III. Promoting an environment conducive to competitive agriculture	→ Competitiveness
Ecological - Environmental	IV. Being environmentally responsible in the rural areas	V. From farm to table: promoting integrated environmental management	VI. Participating in building an institutional environmental framework	→ Sustainability
Sociocultural - human	VII. Quality of life in rural communities: creating know-how and opportunity	VIII. Advancing learning and expertise in the chain	IX. Promoting policies to create capabilities and opportunities for the rural communities	→ Equity
Political - institutional	X. Strengthening public and private sector participation and coordinated action between them in the territories	XI. Strengthening dialogue and commitments among actors in the chain	XII. Promoting national policies and regional and hemispheric cooperation for agriculture and rural life	→ Governance
Strategic objectives	<p>Rural Prosperity ~ Food Security ~ International Positioning</p>			<u>Overarching goal</u> Sustainable development of agriculture and rural milieu

Source: Ministerial Agreements (2005).

Some of the aspects considered and findings during the programme were:

- **Assessment:** in preparing the intervention programme, the teams conducted assessments of the economic, ecological, socio-cultural and governance aspects of the community. Detailed assessments of the agricultural production system were carried out. The number of farms, location of farms, cultivation methods utilized, types of crops cultivated and the use and disposal of produce were examined.
- **Socio-Economic:** following discussions with community leaders, potential participants and other stakeholders, it was determined that there was

significant level of poverty in the community. This was due in part to irregular or non-existent employment opportunities. There was some income derived from the operation of tourist lodge which was funded by an external agency and operated by the community. A significant segment of the community depends on government social development pay-outs.

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- **Ecological:** slash and burn production technique is predominant in the community. However it was not very successful since community members returned too early to previously used plots.
- **Social Infrastructure:** there is a primary school in the community; however the education level of the community members is regarded as low. There is a health clinic operated by the Medical Mission (Medizeps), a foundation made up of religious organizations. The clinic provided vitamins tablets to the community as dietary supplements.
- **Governance:** it was determined that the principal players in the chain of the community were the government, Amazon Conservation Team (ACT), which conducts assessment on medicinal plants in the community and other NGO's also played minor roles in the community.
- **Food Security:** it was found that the community was facing severe food security problems. This was due to flooding, pests of and diseases affecting the main staple – cassava, poor soil quality, inefficiency of the slash and burn technique, population density in relation to hunting and poor diet due to lack of variety.

Following the assessments a Rehabilitation and Enhanced Food and Nutrition Security Project was designed. The major objective of the project were to provide immediate relief to villages affected by the floods, this done by the delivery of packages and other essential domestic supplies by the SRC.

The second objective was to design and implement in collaboration with the community a sustainable food and nutrition security programme. This programme included the following elements:

- a. Improving access by all community members to an adequate, affordable nutrition diet.
- b. Supporting a stable base of family farms that use sustainable production practices that emphasize local input.
- c. Generating production and marketing practices that create direct and beneficial links between producers and consumers.

Activities carried out in the programme included:

- establishment of a demonstration plot;
- relocation of some farms to higher ground;
- assessment of current farming practices;
- acquisition of planting material;
- identification of farmers to participate in the programme;
- training of farmers in such areas as preparation of:
  - plots,
  - planting,
  - crop care,
  - pest management using local botanical products,
  - drainage and irrigation,
  - collecting and storing planting materials,
  - new planting techniques e.g. mounds for cassava.

Additional sessions were conducted in the preparation of vegetables for consumption, since vegetable was not a usual part of the diet of the community. In addition a new staple crop rice has been introduced to add variety to the diet.

Eighteen farmers including young women participated in the program which included production of such traditional crops as cassava, sweet potato, string beans, sopropo, carilla and the introduction of cabbage, tomatoes, egg plant and amsoi.

*Additional sessions were conducted in the preparation of vegetables for consumption, since vegetable was not a usual part of the diet of the community. In addition a new staple crop rice has been introduced to add variety to the diet.*



Photo IICA Suriname

## Results

The programme realized a significant level of success. Some farmers moved their plots to higher ground. New planting material were distributed and utilized and participating farmers were trained in improved planting techniques which they utilized and disseminated to other community members. More community members are utilizing vegetables in their daily diets. Community

members and teachers were trained in preparing vegetables for consumption. There was general acceptance of this addition to the diet. Teachers recognized improvement in attendance, attention span and performance of the pupils. Community members retained planting materials which was not previously done, and replanted vegetable crops.

An element of agrotourism has been introduced with farmers marketing excess produce to nearby tourist lodges and to visitors to the community.

The Granman and community members including health workers and teachers are all loud in their praise for the project since it is not only improving the nutrition of community members, but also enhances the income of participating farmers.

*The project is not only improving the nutrition of community members, but also enhances the income of participating farmers.*



Photo IICA Suriname

## Lessons learnt

The main lesson learnt is that even the most desperate situation can be relieved if intervention agencies and communities work collaboratively on finding solutions, including:

- Climate change has a major impact on food security and seasonal calendar needs to be reviewed and revised in order to improve quality livelihood.

► *The main lesson learnt is that even the most desperate situation can be relieved if intervention agencies and communities work collaboratively on finding solutions.*

- Much satisfaction is realized when communities can generate their own food supply.
- There is a need to diversifying of staple production.
- There is need for on-going support from national institutions to communities after projects are concluded to keep pace of new technology.

The introduced staple crop-rice has shown promise and this would be expanded knowing more new farmers have shown interest and have begun to cultivate plots. Participating farmers have expressed willingness to expand their plots and this will be encouraged. The inclusion of the school in the community serves the need to develop more participatory plans.

The task is not finished, further work will be undertaken to develop organic pesticides to manage leaf cutting ants (*Atta sp.*) and other pests and work will be done in support of harvesting post harvest management and marketing of crops.

## Literature consulted

FAO (Food and Agriculture Organization of the United Nations). 2007. Agricultural trade policy and food security in the Caribbean. Ed. JR Deep Ford. IT, Roma, Crescenzo dell'Aquila y Piero Conforti.

IICA (Inter-American Institute for Cooperation on Agriculture). 2007. Agro Plan 2003-2015 for Agriculture and Rural Life in the Americas. Hemispheric Ministerial Agreements. San José, CR, IICA.

\_\_\_\_\_. 2009a. Directorate of Operations and Regional Integration, Institutional Guidelines on Food Security, St. Kitts and Nevis.

\_\_\_\_\_. 2009b. IICA Strategy for Technical Cooperation in Food Security. Regional Meeting on food security. St. Kitts and Nevis, Directorate of Technical Leadership and Knowledge Management.

International Federation of Red Cross and Red Crescent Societies. 2006. Vulnerability and Capacity Assessment – Lessons learnt and recommendations. Ginebra.

\_\_\_\_\_. 2008. Suriname Flood Emergency Appeal. Gordon, RM. 2009. Enhancement of Food Security in the Caribbean through Increased Domestic supply and consumption of Domestically Produced Food.

Nahar, T. 2009. Suriname Red Cross (SRC) collaboration with IICA. Accountability Seminar. Paramaribo, IICA.



## Du secours aux victimes des inondations à la sécurité alimentaire et nutritionnelle et à la création de revenus

Les effets dévastateurs des violents phénomènes atmosphériques provoqués par le changement climatique apportent souvent des occasions d'améliorer la sécurité alimentaire et nutritionnelle dans les collectivités touchées. Les inondations survenues dans plusieurs collectivités de l'arrière-pays au Suriname en 2008 ont fourni une telle occasion. Le village de Kwamalasamutu, l'une des plus grandes collectivités amérindiennes du sud du Suriname, près de la frontière avec le Brésil, a été gravement touchée. Les fermes ont été inondées et la sécurité alimentaire de la collectivité a alors été menacée.

Un projet conjoint de secours, de remise en état et de sécurité alimentaire et nutritionnelle a été mené par l'IICA au Suriname et la Croix-Rouge du Suriname. L'expérience décrite dans le présent document a conduit à une amélioration de la sécurité alimentaire de la collectivité et à la création de revenus pour les agriculteurs participants.



## Do auxílio humanitário à segurança alimentar e a geração de rendimentos

Os efeitos devastadores dos severos tipos de clima ocasionados pelas mudanças climáticas frequentemente ensejaram oportunidades para fortalecer a segurança alimentar e nutricional nas comunidades afetadas. Em 2008, as enchentes ocorridas em diversas comunidades do interior do Suriname apresentaram esse tipo de oportunidade. Kwamalasamutu, uma das maiores comunidades indígenas ao Sul do país, próxima à fronteira com o Brasil, foi seriamente afetada. Fazendas foram alagadas, e a segurança alimentar da comunidade viu-se ameaçada.

Um projeto conjunto para mitigação, recuperação e segurança alimentar e nutricional foi realizado pelo Escritório do IICA e pela Cruz Vermelha no Suriname. A experiência relatada neste documento resultou no aumento da segurança alimentar na comunidade e na geração de renda para os pequenos produtores participantes.



## Del auxilio humanitario a la seguridad alimentaria y la generación de ingresos

Con frecuencia, los efectos devastadores de los patrones meteorológicos severos ocasionados por el cambio climático ofrecen oportunidades para mejorar la seguridad alimentaria y nutricional de las comunidades afectadas por dichos fenómenos. Un ejemplo de ello fueron las inundaciones acaecidas en varias comunidades del interior de Surinam durante el 2008. Kwamalasamutu, una de las comunidades amerindias más grandes del sur de ese país, ubicada cerca de la frontera con Brasil, la cual resultó gravemente afectada. La seguridad alimentaria de dicha comunidad se vio amenazada debido a que las fincas se inundaron.

La Oficina del IICA en Surinam y la Cruz Roja de este país realizaron un proyecto conjunto de auxilio, rehabilitación y seguridad alimentaria y nutricional. La experiencia que se describe en este documento mejoró la seguridad alimentaria de la comunidad y generó ingresos a los agricultores participantes.



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